



west virginia department of environmental protection

Office of Oil and Gas
601 57th Street SE
Charleston, WV 25304
(304) 926-0450
(304) 926-0452 fax

Earl Ray Tomblin, Governor
Randy C. Huffman, Cabinet Secretary
www.dep.wv.gov

May 20, 2016

WELL WORK PLUGGING PERMIT

Plugging

This permit, API Well Number: 47-9701863, issued to EQT PRODUCTION COMPANY, is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to all conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas inspector.

Upon completion of the plugging well work, the above named operator will reclaim the site according to the provisions of WV Code 22-6-30. The above named operator will also file, as required in WV Code 22-6-23, an affidavit on form WR-38 by two experienced persons in the operator's employment and the Oil and Gas inspector that the work authorized under this permit was performed and a description given. Failure to abide by all statutory and regulatory provisions governing all duties and operations here under may result in suspensions or revocation of this permit and in addition may result in civil and/or criminal penalties being imposed upon the operator.

This permit will expire in two (2) years from date of issue. If there are any questions, please free to contact me at (304) 926-0499 ext. 1654.



James Martin
Chief

Operator's Well No: 9
Farm Name: MOSS, L. L.
API Well Number: 47-9701863
Permit Type: Plugging
Date Issued: 05/20/2016

Promoting a healthy environment.

05/20/2016

PERMIT CONDITIONS

West Virginia Code §22-6-11 allows the Office of Oil and Gas to place specific conditions upon this permit. Permit conditions have the same effect as law. Failure to adhere to the specified permit conditions may result in enforcement action.

CONDITIONS

1. All pits must be lined with a minimum of 20 mil thickness synthetic liner.
2. In the event of an accident or explosion causing loss of life or serious personal injury in or about the well or while working on the well, the well operator or its contractor shall give notice, stating the particulars of the accident or explosion, to the oil and gas inspector and the Chief within twenty-four (24) hours.
3. Well work activities shall not constitute a hazard to the safety of persons.
4. This well is under a consent order and must be plugged under the terms of that agreement.

9701863 P

Form WW-4 (B)
Permit Copy
(Rev 2/01) RECEIVED
Office of Oil and Gas

CK #
20445
\$100**

Date: April 12, 2016
Operator's Well
Well No. 151641 (L. L. Moss #9)
API Well No.: 47 097 - 01863

MAY 17 2016

STATE OF WEST VIRGINIA
DIVISION OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS

WV Department
Environmental Protection

APPLICATION FOR A PERMIT TO PLUG AND ABANDON

4) Well Type: Oil _____ Gas X Liquid Injection _____ Waste Disposal: _____
If Gas, Production _____ X Or Underground storage _____ Deep _____ Shallow X

5) Elevation: 2178 ft. Watershed: _____
Location: Washington County: Upshur Quadrangle: Ellamore 7.5'
District: _____

6) Well Operator EQT Production Company
Address: 120 Professional Place
Bridgeport, WV 26330

7) Designated Agent: Rex C. Ray
Address: 120 Professional Place
Bridgeport, WV 26330

8) Oil & Gas Bryan Harris
Name: P. O. Box 157
Address: Volga, WV 26238

9) Plugging Contractor:
Name: HydroCarbon Well Service
Address: PO BOX 995
Buckhannon, WV 26201

10) Work Order: The work order for the manner of plugging this well is as follows:
See Attachment for details and procedures.

OFFICE USE ONLY

Notification must be given to the district oil and gas inspector 24 hours before permitted work can commence.

Work order approved by inspector Bryan O'Hara Date 4-20-16

05/20/2016

PLUGGING PROGNOSIS

L.L.Mess#1 *Mess # 9*
 151641
 District, Washington
 Upshur, WV
 API # 47-097-01863
 BY: R. Green
 DATE: 11/30/15

CURRENT STATUS:

Elevation @ 2230'
 TD @ 3887'
 11" csg @ 8'
 8 5/8" csg @ 673' (CTS)
 4 1/2" csg @ 3836' (CTS)
 Freshwater, @ none reported
 Saltwater @ none reported
 Gas shows @ 1376'- 1404', 3592'- 3610', & 3722'- 3740'
 Oil shows @ none reported
 Coal @ 353', & 616'

1. Notify State Inspector, Bryan Harris, 304-553-6087, 24 hrs. prior to commencing operations.
2. RIH check TD. *500'*
3. TIH tbg to 3750' set *400'* C1A cement plug *3750'* to 3350'. (Upper and Lower Benson perforations). *Bottom hole plug - B.H.*
4. TOOH tbg to 3350', gel hole 3350' to 2400'.
5. TOOH tbg to 2400' set 200' C1A cement plug 2400' to 2200' (Elevation).
6. TOOH tbg to 2200', gel hole 2200' to 1500'.
7. TOOH tbg to 1500' set 300' C1A cement plug 1500' to 1200', (Big Injun perforations).
8. TOOH tbg to 1200', gel hole 1200' to 700'.
9. TOOH tbg to 700', set 200' C1A cement plug 700' to 500', (8 5/8" casing seat).
10. TOOH tbg to 500' gel hole 500' to 400'.
11. TOOH tbg to 400', set 400' C1A cement plug 400' to surface.
12. Erect monument with API# and date plugged.
13. Reclaim location, roads to WV-DEP specifications.

★ *FACEPOINT, CUT & POLL 4 1/2" CASING IF POSSIBLE.*
PLACE 100' C1A CEMENT PLUG ACROSS CASING CUT.
gwm

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 Office of Oil and Gas

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WV Department of
 Environmental Protection

9701863P

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JAN 21 1979

OG-10
Rev. - 9-71



STATE OF WEST VIRGINIA
DEPARTMENT OF MINES

OIL & GAS DIVISION
DEPT. OF MINES

Oil and Gas Division

Union Drilling Corp.
Rig #6

WELL RECORD 28

Rotary X Oil _____
Cable _____ Gas X _____
Recycling _____ Comb. _____
Water Flood _____ Storage _____
Disposal _____ (Kind)

Quadrangle Sago

Permit No. Ups - 1863

47-097

Company NRM Petroleum Corporation
Address P.O. Box 816, Buckhannon, W. Va. 26201
Farm L.L. Moss Acres 317

Location (waters) Mid. Pk. River
Well No. 9 Elev 2230 EKB
District Washington County Upshur

The surface of tract is owned in fee by _____
same

Address _____
Mineral rights are owned by _____
Address _____

Drilling Commenced 10-16-78
Drilling Completed 10-21-78

Initial open flow 223M cu. ft. _____ bbls.
Final production 1138M cu. ft. per day _____ bbls.
Well open _____ hrs. before test 650# RP.

Casing and Tubing	Used in Drilling	Left in Well	Cement fill up Cu. ft. (Sks.)
Size 20-16			
Cond. <u>1770' 11"</u>	<u>8'</u>	<u>-</u>	
<u>9 5/8</u>			
<u>8 5/8</u>	<u>673'</u>	<u>673'</u>	<u>190 sks. Hal.</u>
<u>7</u>			
<u>5 1/2</u>			
<u>4 1/2</u>		<u>3836'</u>	<u>520 sks. Hall.</u>
<u>3</u>			
<u>2</u>			
Liners Used			

Well treatment details:

Attach copy of cementing record.

- 1st stage Frac L. Benson with 500 gal. HCl, 10,000# 80/400, 30,000# 20/40 in 617 bbl. Hall
Bd. 2300#, ATP. 2035#, ISI. 1200#, AIR. 40.1 BPM
- 2nd stage Frac Upper Benson with 500 gal. HCl, 10000# 80/100, 30000# 20/40 in 590 bbl. Hal
Bd. 2500#, ATP 1450#, ISI 800#, AIR 34.1 BPM
- 3rd stage Frac Injun with 500 gal. HCl, 40,000# 20/40 in 503 bbl. Hall.
Bd. -, ATP 1200#, ISI 500#, AIR 33.5 BPM

Coal was encountered at 353-356, 616-618 Feet _____ Inches
Fresh water _____ Feet _____ Salt Water _____ Feet _____
Producing Sand Lower Benson, Upper Benson, Injun Depth 3722-40, 3592-3610, 1376-1404
Holes 14 14 14

Formation	Color	Hard or Soft	Top Feet	Bottom Feet	Oil, Gas or Water	* Remarks
GL			0	10		
Sand & Shale			10	128		
Shale & Sand			128	266		
Sand			266	312		
Shale & Sand			312	353		
Coal			353	356		
Shale & Sand			356	446		
Sand			446	496		
Shale			496	616		
Coal			616	618		
Sand & Shale			618	684		
Shale			684	722		
Sand			722	788		
Shale & Sand			788	1068		
Little Lime			1068	1096		
Shale			1096	1132		
Blue Monday			1132	1140		
Big Lime			1140	1316		
Injun			1316	1406		
Sand & Shale			1406	1780		
Gordon			1780	1802		
Sand & Shale			1802	1904		
Fourth Sand			1904	1924		
Shale			1924	1926		

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Office of Oil & Gas
APR 18 2016

Gas chk. 1504 239M

05/20/2016

(over)

* Indicates Electric Log tops in the remarks section.

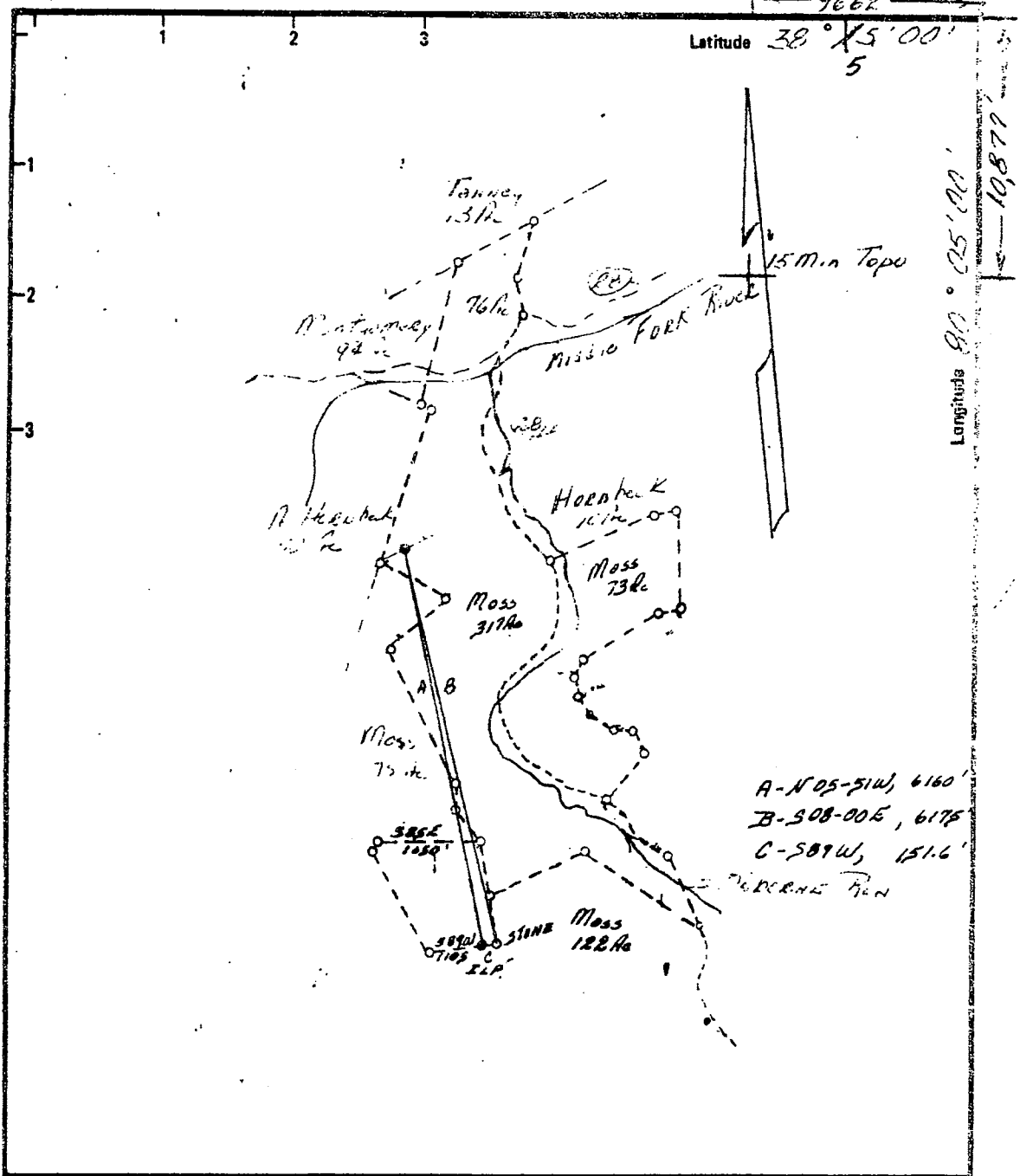
Formation	Color	Hard or Soft	Top Feet	Bottom Feet	Oil, Gas or Water	* Remarks
Fifth Sand			1926	2002		
Shale & Sand			2002	2114		
Bayard			2114	2124		
Shale & Sand			2124	2464	Gas chk. 2185'	82M
Speechley			2464	2488		
Shale & Siltstone			2488	3584	Gas chk. 2809'	246M
Upper Benson			3584	3610		
Shale & Siltstone			3610	3716	Gas chk. 3616'	223M
Lower Benson			3716	3740		
Shale & Siltstone			3740	-	Gas chk 3804'	223M
TOTAL DEPTH				3887		
Logged by Allegheny Nuclear Surveys			Gamma - Density - Temperature - Induction			
Initial open flow 223 Mcf per day						

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Office of Oil & Gas
APR 18 2016

Date 1-22 1978
 APPROVED R. L. Hopkins Owner
 By V. Pres
 (Title)

05/20/2016

Q20863 8/11/78
9662



A-N 05-51W, 6160'
B-S 08-00E, 6175'
C-S 09W, 151.6'

New Location
 Drill Deeper
 Abandonment

Minimum Error of Closure 1" in 200'
 Source of Elevation USGS - BM - ELLIEMORE - 1842'
 Says is spray map
 "I, the undersigned, hereby certify that this map is correct to the best of my knowledge and belief and shows all the information required by paragraph 6 of the rules and regulations of the oil and gas section of the mining laws of West Virginia." Harry D. Jones

Company NRM Petroleum Corp
 Address PO Box 816, Raleigh, N.C.
 Farm L.L. Moss, Buckhannon
 Tract 1 Acres 3.0 Lease No. _____
 Well (Farm) No. _____ Serial No. _____
 Elevation (Spirit Level) 5220
 Quadrangle 304
 County Wayne District Warburton
 Engineer Harry D. Jones
 Engineer's Registration No. 612
 File No. _____ Drawing No. _____
 Date 10/21/78 Scale _____

STATE OF WEST VIRGINIA
 DEPARTMENT OF MINES
 OIL AND GAS DIVISION
 CHARLESTON

Received
 WELLS LOCATION MAP
 FILE NO. UPS-1863
 APR 18 2016

+ Denotes location of well on United States Topographic Maps, scale 1 to 62,500 latitude and longitude lines being represented by border lines as shown.
 - Denotes one inch spaces on border line of original tracing.

47-097 **05/20/2016**

4600' Boundary

9701863P

WW-4-A
Revised 6/07

1) Date: April 12, 2016
2) Operator's Well Number
151641 (L. L. Moss #9)
3) API Well No.: 47 097 - 01863
State County Permit

STATE OF WEST VIRGINIA - BUREAU OF ENVIRONMENT
DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL & GAS
NOTICE AND APPLICATION TO PLUG AND ABANDON WELL

4) Surface Owner(s) to be served:	5) (a) Coal Operator:
(a) Name <u>Moss Family L. L. C. ✓</u>	Name <u>None</u>
Address <u>5 S. Primrose Lane</u>	Address _____
<u>Ocean View, DE 19970</u>	_____
(b) Name _____	(b) Coal Owner(s) with Declaration
Address _____	Name <u>None</u>
_____	Address _____
_____	_____
(c) Name _____	Name _____
Address _____	Address _____
_____	_____
6) Inspector <u>Bryan Harris</u>	(c) Coal Lessee with Declaration
Address <u>P. O. Box 157</u>	Name <u>None</u>
<u>Volga, WV 26238</u>	Address _____
Telephone <u>(304) 553-6087</u>	_____

TO THE PERSONS NAMED ABOVE: You should have received this Form and the following documents:

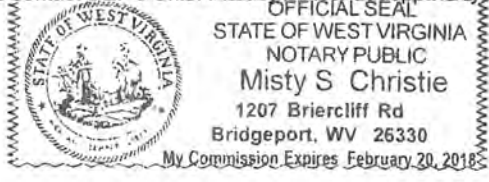
- (1) The application to Plug and Abandon a Well on Form WW-4B, which sets out the parties involved in the work and describes the well its and the plugging work order; and
 - (2) The plat (surveyor's map) showing the well location on Form WW-6.
- The reason you received these documents is that you have rights regarding the application which are summarized in the instructions on the reverses side. However, you are not required to take any action at all.

Take notice that under Chapter 22-6 of the West Virginia Code, the undersigned well operator proposes to file or has filed this Notice and Application and accompanying documents for a permit to plug and abandon a well with the Chief of the Office of Oil and Gas, West Virginia Division of Environmental Protection, with respect to the well at the location described on the attached Application and depicted on the attached Form WW-6. Copies of this Notice, the Application, and the plat have been mailed by registered or certified mail or delivered by hand to the person(s) named above (or by publication in certain circumstances) on or before the day of mailing or delivery to the Chief.

Well Operator:	<u>EQT Production Company</u>
By:	<u>Victoria J. Roark</u>
Its:	<u>Permitting Supervisor</u>
Address:	<u>PO Box 280</u>
	<u>Bridgeport, WV 26330</u>
Telephone:	<u>(304) 848-0076</u>

Subscribed and sworn before me this 14th day of April, 2016
Misty S. Christie Notary Public
My Commission Expires: 2/20/19

The Office of Oil & Gas processes your personal information, such as name, address and phone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use of your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.



Office of Oil & Gas
APR 18 2016
05/20/2016

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL & GAS
CONSTRUCTION AND RECLAMATION PLAN AND SITE REGISTRATION APPLICATION FORM
GENERAL PERMIT FOR OIL AND GAS PIT WASTE DISCHARGE

Operator Name: EQT PRODUCTION COMPANY OP ID: _____
Watershed: _____ Quadrangle: Ellamore 7.5'
Elevation: 2178 ft. County: Upshur District: Washington

Description of anticipated Pit Waste: Formation Fluids

Do you anticipate using more than 5,000 bbls of water to complete the proposed well work? Yes__ No X
Will synthetic liner be used in the pit? Yes Is so, what ml.? 20 40-ml gpm

Proposed Disposal Method for Treated Pit Wastes:
 Land Application
 Underground Injection - UIC Permit Number _____
 Reuse (at API Number) - Various _____
 Offsite Disposal Permit #. See attached. _____
 Other: Explain _____

Drilling medium anticipated for this well? Air, freshwater, oil based, etc. _____
If oil based, what type? Synthetic, petroleum, etc. _____
Additives to be used? _____

Will closed loop system be used? _____
Drill Cuttings disposal method? Leave in pit, landfill, remove offsite, etc. _____
If left in pit and plan to solidify what medium will be used? Cement, Lime, sawdust _____
Landfill or offsite name/permit number? _____

I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on August 1, 2005, by the Office of Oil and Gas of the West Virginia Division of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations of any terms or condition of the general permit and/or other applicable law or regulation can lead to enforcement action.
I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment.

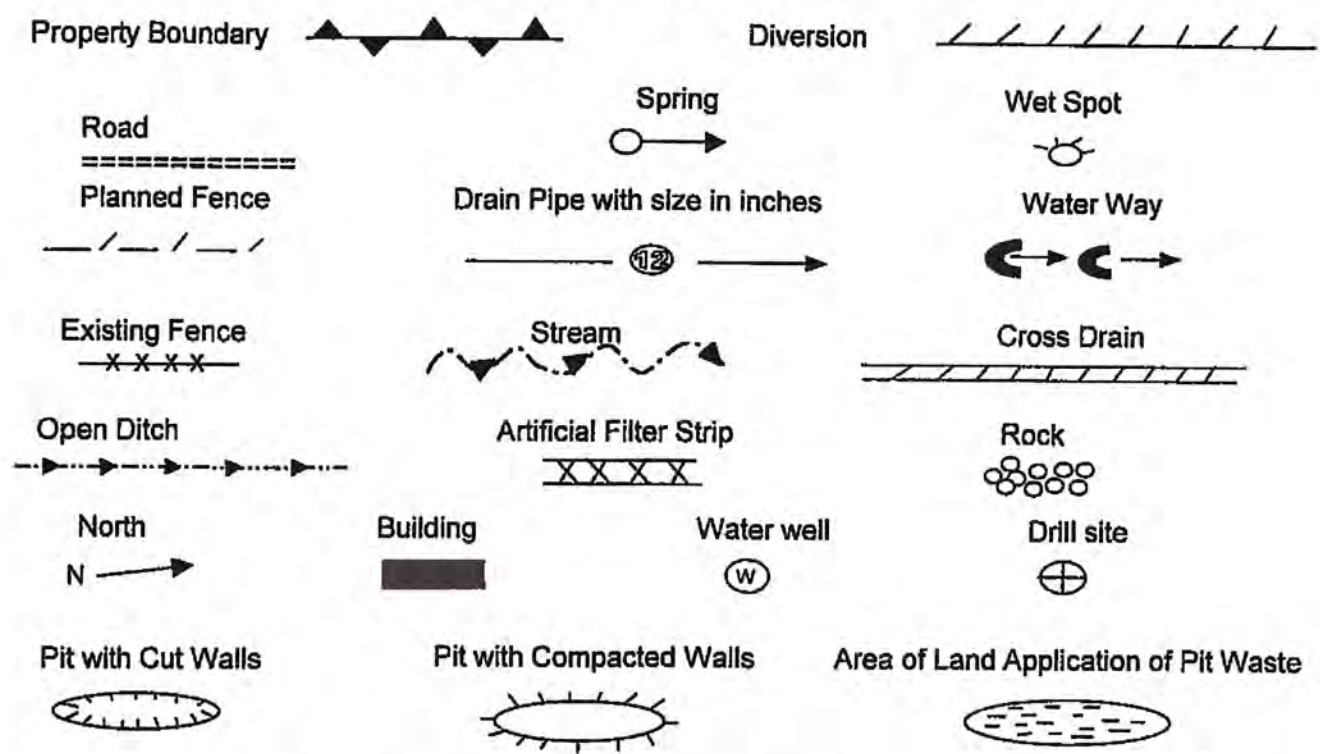
Company Official Signature *Victoria Roark*
Company Official (Typed or Printed) Victoria Roark
Company Official Title Permitting Supervisor-WV
Subscribed and sworn before me this 2nd day of May, 2016

Misty S. Christie Notary Public
My Commission Expires 2/20/18



OPERATOR'S WELL NO.:
151641 (L. L. Moss #9)

LEGEND



Proposed Revegetation Treatment: Acres Disturbed: 1± Prevegetation pH _____
 Lime 3 Tons/acre or to correct to pH 6.5
 Fertilizer (10-20-20) or equivalent 1/3 ton lbs/acre (500 lbs minimum)
 Mulch 2 Tons/acre or hydroseed.

SEED MIXTURES

Area I		Area II	
Seed Type	lbs/acre	Seed Type	lbs/acre
Red Fescue	40	Red Fescue	15
Alsike Clover	5	Alsike Clover	5
Annual Rye	15		

ATTACH:
 Drawing(s) of road, location, pit and proposed area for land application.
 Photocopies section of involved 7.5' topographic sheet.

Plan approved by: Bryan H. [Signature]

Comments: _____

REC'D
 Office of Oil

MAY 17 2016

WV Dept.
 Environment

Title: _____ Date: 5-9-16
 Field Reviewed? Yes No

EQT Production Water plan Offsite disposals
--

Waste Management - Meadowfill Landfill

Rt. 2, Box 68 Dawson Drive
Bridgeport, WV 26330
304-326-6027
Permit #SWF-1032-98
Approval #100785WV

Waste Management - Northwestern Landfill

512 E. Dry Road
Parkersburg, WV 26104
304-428-0602
Permit #SWF-1025 WV-0109400
Approval #100833WV



May 4, 2016

Mr. Jeff McLaughlin
West Virginia Department of Environmental Protection
Office of Oil and Gas
601 57th Street SE
Charleston, WV 25304

Re: Revision of 47-097-01863

Dear Mr. McLaughlin,

Enclosed is an updated WW-9 for the above API number. The disposal method was updated from Land Application, which now requires a permit, to Reuse and Offsite Disposal. I have sent new pages to the inspectors for their signatures.

If you have any questions, please do not hesitate to contact me at (304) 848-0076.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Vicki Roark'.

Vicki Roark
Permitting Supervisor-WV

Enc.

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Office of Oil and Gas
MAY 05 2016
WV Department of
Environmental Protection

9701863P

Topo Quad: Ellamore 7.5'

Scale: 1" = 2000'

County: Upshur

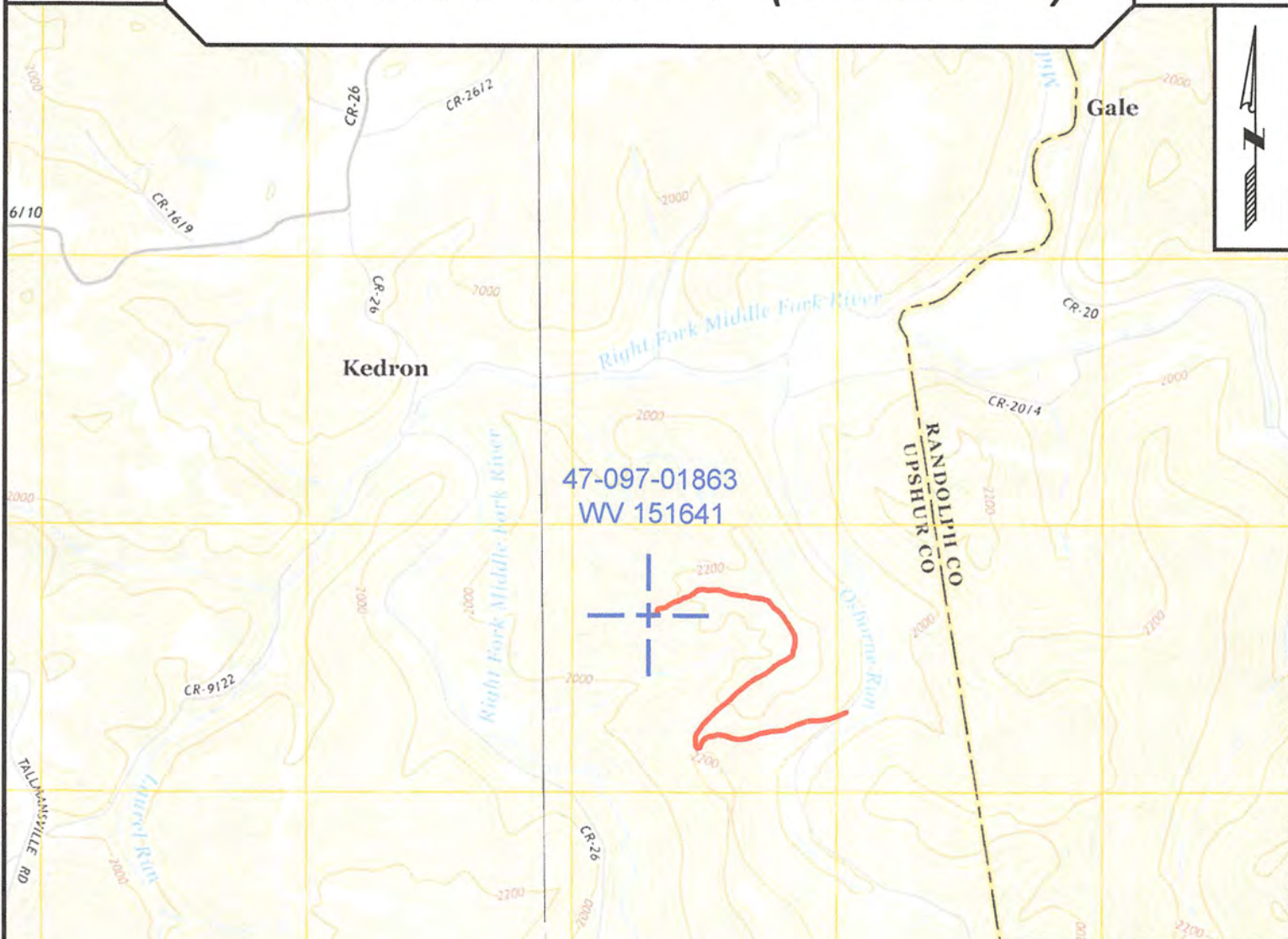
Date: January 25, 2016

District: Washington

Project No: 39-09-00-09

47-097-01863 WV 151641 (L. L. Moss #9)

Topo



47-097-01863
WV 151641

NAD 27, South Zone
N:688469.96
E:2250332.17

WGS 84
LAT:38.887504
LONG:-80.120393
ELEV:2178.44



SURVEYING AND MAPPING SERVICES PERFORMED BY:
ALLEGHENY SURVEYS, INC.
 1-800-482-8606
 237 Birch River Road
 Birch River, WV 26610
 PH: (304) 649-8606
 FAX: (304) 649-8608

PREPARED FOR: **Office of Oil & Gas**
EQT Production Company
 P.O. Box 280
 Bridgeport, WV 26330
 APR 28 2016
05/20/2016



POTENTIAL WATER SAMPLE DATA SHEET

CLIENT: EQT PRODUCTION COMPANY
LEASE NAME AND WELL No. L. L. Moss #9 - WV 151641 - API No. 47-097-01863

POTENTIAL SAMPLE LOCATIONS

There appears to be no known water samples within the required 1000' of the existing well WV 151641.

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Office of Oil & Gas
APR 18 2016

BIRCH RIVER OFFICE
237 Birch River Road
Birch River, WV 26610
phone: 304-649-8606
fax: 304-649-8608

BRIDGEPORT OFFICE
172 Thompson Drive
Bridgeport, WV 26330
phone: 304-848-5035
fax: 304-848-5037

ALUM CREEK OFFICE
P.O. Box 108 • 1413 Childress Rd
Alum Creek, WV 25003
phone: 304-756-2949
fax: 304-756-2948

MARTINSBURG OFFICE
25 Lights Addition Drive
Martinsburg, WV 25404
phone: 304-901-2162
fax: 304-901-2182

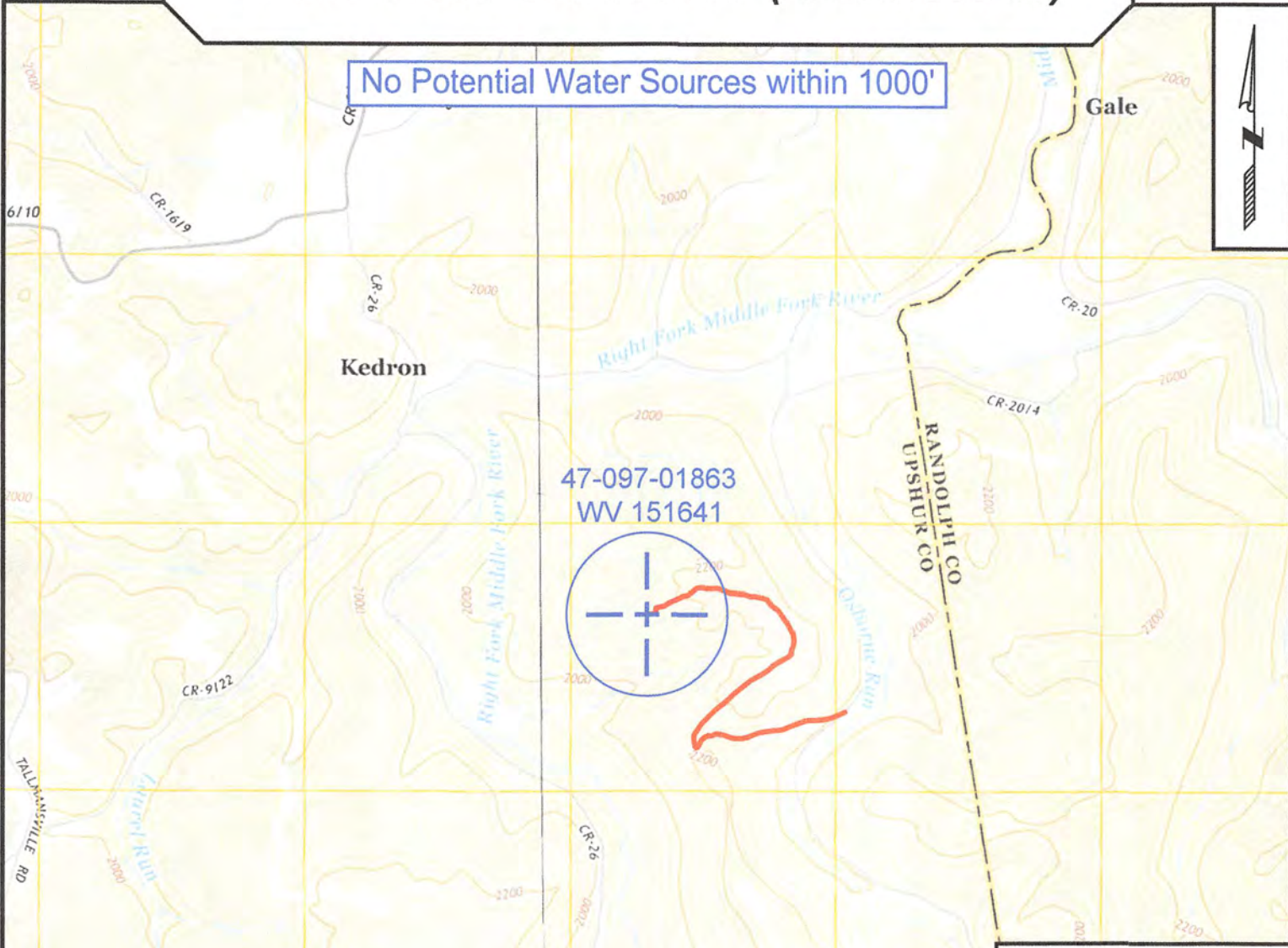
2701863P

Topo Quad: Ellamore 7.5' Scale: 1" = 2000'
 County: Upshur Date: January 25, 2016
 District: Washington Project No: 39-09-00-09

Water

47-097-01863 WV 151641 (L. L. Moss #9)

No Potential Water Sources within 1000'



47-097-01863
WV 151641

NAD 27, South Zone
N:688469.96
E:2250332.17

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WGS 84
LAT:38.887504
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ELEV:2178.44



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 PH: (304) 649-8606
 FAX: (304) 649-8608

PREPARED FOR:
EQT Production Company
 P.O. Box 280
 Bridgeport, WV 26330
05/20/2016

WW-7
8-30-06



West Virginia Department of Environmental Protection
Office of Oil and Gas
WELL LOCATION FORM: GPS

API: 47-097-01863 WELL NO.: WV 151641 (L. L. Moss #9)

FARM NAME: L. L. Moss

RESPONSIBLE PARTY NAME: EQT Production Company

COUNTY: Upshur DISTRICT: Washington

QUADRANGLE: Ellamore 7.5'

SURFACE OWNER: Moss Family, LLC

ROYALTY OWNER: Thurstone FL, et al.

UTM GPS NORTHING: 4304661

UTM GPS EASTING: 576288 GPS ELEVATION: 664 m (2178 ft)

The Responsible Party named above has chosen to submit GPS coordinates in lieu of preparing a new well location plat for a plugging permit or assigned API number on the above well. The Office of Oil and Gas will not accept GPS coordinates that do not meet the following requirements:

- Datum: NAD 1983, Zone: 17 South, Coordinate Units: meters, Altitude: height above mean sea level (MSL) – meters.
- Accuracy to Datum – 3.05 meters
- Data Collection Method:
Survey grade GPS : Post Processed Differential
Real-Time Differential
Mapping Grade GPS X: Post Processed Differential X
Real-Time Differential

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APR 18 2016

4. Letter size copy of the topography map showing the well location.

I the undersigned, hereby certify this data is correct to the best of my knowledge and belief and shows all the information required by law and the regulations issued and prescribed by the Office of Oil and Gas.

Signature

PS # 2180
Title

1/29/16
Date